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ARTICLES

M. RUDNER

CANADA'S OFFICIAL DEVELOPMENT
STRATEGY: PROCESS, GOALS AND
PRIORITIES

D. MORALES-GÓMEZ

IS BASIC EDUCATION FOR ALL A SOLUTION TO
THE DEVELOPMENT CRISIS OF THE 1990S?

M.-F. LABRECQUE

FEMMES DU YUCATAN : VERS UNE REDÉFINITION
DE LA FORCE DE TRAVAIL DES PAYSANNES

B. KELLER and D.C. MBEWE

POLICY AND PLANNING FOR THE EMPOWER-
MENT OF ZAMBIA'S WOMEN FARMERS

F. MARTIN

FAIBLESSES, EMBÛCHES ET ABUS DANS LES
ANALYSES AVANTAGES-CÔÛTS DE PROJETS

R. LOONEY

EMPLOYMENT PATTERNS IN A CAPITAL-RICH,
LABOUR-POOR COUNTRY: QATAR AS A CASE
STUDY

R. ZIND

TWO DECADES OF DEVELOPMENT, 1960-1980:
A CROSS-COUNTRY ASSESSMENT

REFLECTIONS ON DEVELOPMENT PRACTICES

RÉFLEXIONS SUR LA PRATIQUE DU DÉVELOPPEMENT

T. DOTTRIDGE

INTRODUCTION

D. BUTZ, S. LONERGAN and B. SMIT

WHY INTERNATIONAL DEVELOPMENT NEGLECTS
INDIGENOUS SOCIAL REALITY

B. LESSER

WHEN GOVERNMENT FAILS, WILL THE MARKET
DO BETTER?

THE PRIVATIZATION/MARKET LIBERALIZATION
MOVEMENT IN DEVELOPING COUNTRIES

D. GLOVER

A LAYMAN'S GUIDE TO STRUCTURAL
ADJUSTMENT

P. GILLESPIE

DEVELOPMENT PROSPECTS IN BANGLADESH:
CRITICAL OPTIONS FOR CANADIAN AID POLICY

B.L. CROWLEY

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UNITED NATIONS DEVELOPMENT PROGRAM
IN ZAIRE

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Employment Patterns in a Capital-Rich, Labour-Poor Country: Qatar as a Case Study*

ROBERT E. LOONEY
Naval Postgraduate School, Monterey, California

ABSTRACT

The purpose of this paper is to examine the dynamics of employment creation in a small labour-importing country, Qatar. The main findings of the study suggest that a general decline in worker productivity has taken place in the country. This decline is evidenced primarily by the lack of a strong link between increases in employment and corresponding increases in output. In part, this phenomenon reflects the excessive retention and even expansion of the number of public sector workers, during a period of contraction of employment opportunities in the mixed (and presumably private) sectors.

RÉSUMÉ

Cet article examine la dynamique de la création d'emplois au Qatar, un petit pays qui importe une grande partie de sa main d'oeuvre. L'auteur montre que, malgré l'augmentation du nombre total des emplois, il y a eu une baisse générale de la productivité de la main d'oeuvre de ce pays. Ce phénomène s'explique en partie par le fait que, dans une période de contraction de l'emploi dans les secteurs mixte et privé, il y a eu une rétention excessive et même une expansion du nombre d'emplois dans le secteur public.

INTRODUCTION

Most of the vast literature on developing countries focuses on situations of capital shortages and labour abundance. The Arabian Gulf region and, in particular, Qatar, where surpluses of capital and shortages of labour (manpower) are the main growth-restricting factors, present an interesting contrast (El Mallakh, 1979 and Nafi, 1983).

The economic restructuring following post-1982 decline and leveling-off in oil revenues is forcing the government of Qatar to take a hard look at the country's chronic dependence on foreign labour. While the country is striving for sustained

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rates of real growth in the 1990s, many analysts (Such as O'Sullivan, 1989 and Muna, 1987) warn that the nation's limited pool of technical and managerial staff could be the biggest single constraint to development.

Qatar's reliance on foreign labour is well established and apparently enduring. It is estimated that in 1986 about 73% of the total population were non-nationals. Nearly 90% of the labour force consisted of foreign workers (United Nations, 1987).

Despite the seriousness of the problem, little is known about the main factors responsible for the country's employment configurations. In particular, previous studies have not attempted to identify and quantify the determinants of the country's main employment patterns. The purpose of this paper is to make an initial attempt at examining this issue. What are the main determinants of employment in the country? How do these determinants vary between national and foreign workforces? Have these determinants changed over time? Has Qatar followed a pattern of domestic/foreign employment typical of other Gulf countries?

I. DEMOGRAPHIC PATTERNS

The population of Qatar grew from around 70,000 in the late 1960s to around 400,000 by 1989. The indigenous Qatari population is currently slightly over 100,000 (United Nations, 1987), and is comprised predominantly of Whabi Muslims, like their neighbours in Saudi Arabia. Over 40% of the population is under 15 years of age, due in large part to the country's relatively high birth rate by international (but not Gulf) standards (Economist Intelligence Unit, 1988, p.94).

Education in Qatar is free but not compulsory. The first primary school was established in 1952 and by 1986 the school population had risen above 50,000, about 60% of whom were studying at primary level. There were 165 schools in 1985. As a result of expanded educational opportunities, enrollment rates in Qatar have increased dramatically. The country now has enrollment rates that are high, even for high income oil exporters. Qatar university was established in 1977, the first students graduated in 1981, and by 1986 the number of students at Qatar University and overseas was around 5,000.

In general, however, more emphasis has been put on academic education than on vocational and technical training, with very small percentages of national students enrolled in vocational as opposed to general secondary schools. Vocational studies are still looked down upon by students and their families, having normally attracted the drop-outs of the formal system and the academically less successful. Besides, the curriculum of primary and secondary schools is relatively simple and primary teachers can be trained quickly or drawn upon from neighbouring Arab countries. In contrast, requirements for vocational, technical or higher institutions are more expensive and qualified instructors are much more difficult to train.

The majority of immigrants who have moved to Qatar over the past decade are from the Indian sub-continent, the Arab world and increasingly from the Far East, and South Asia. In the early 1980s, over 50% of the immigrant population was Pakistani, but this proportion is likely to have changed since 1983, when an estimated 60,000 expatriates left the country in a single year.

Asians have continued to decline, but at perhaps a slower rate, at least in the country's mixed sector, consisting of the: (a) Qatar General Petroleum Corporation, (QGPC), (b) Qatar Steel Company, (QASCO), (c) Qatar National Cement Company (QNCC), and (d) the Qatar National Telephone Services (QNTS).

An increasing share of non-national Arabs in the government sector has occurred in the last several years, although the balance between Qatari and non-Qatari has remained fairly stable at 42 to 58%. However, this ratio falls from 34 to 66 for professional workers in the government.

Qataris make up about 85% of the government's administrators. In contrast to many other Gulf countries, employment in the public sector continued to increase at a relatively high average annual rate of 7.6% over the 1985-87 period. In fact, foreigners working for the Qatari Government increased at a slightly higher (8.2%) rate than Qataris (6.8%).

In terms of the educational levels of the government workforce, around 44% of Qataris are illiterate, or only read or write. In contrast, only 30% of foreign workers fall into this category (Table 1). Similarly, only 7.5% of Qataris working for the government have a diploma, as opposed to 17.7% of the foreigners in Qatari public service.

In the mixed sector, (Table 2) 38% of the Qataris are illiterate or can only read or write, whereas only 7.6% of non-Qataris have this limitation. Interestingly enough, these patterns do not prevail in the private sector, where around 60% of both Qataris and non-Qataris are illiterate or only read or write (Table 3). In large part, most Qataris are employed in services (including utilities) with relatively few natives, even by Gulf standards, seeking jobs in agriculture, manufacturing, or construction).

II. MANPOWER PROBLEMS

Despite the expansion of educational opportunities over the last several decades, Qatar has not been able to make a significant reduction in the size of its foreign workforce. A combination of economic, political and social factors have been proposed to account for conditions in the Qatari labour market (Muna, 1987, p.55):

1. **Small indigenous population.** About one third of the 400,000 people living today in Qatar are nationals. As in most Arab countries, the economically active population in Qatar is around 25%—thus the number of Qataris available for employment is estimated at 33,000 nationals.
 2. **Lack of manpower planning.** There is a serious imbalance between the supply and demand of manpower: a shortage of Qataris with professional, scientific or technical education and training, compounded by an over-supply of Qataris who studied arts and humanities. It may not be too long before a number of unemployed Qatari graduates join the large pool of underemployed Qatari graduates.
 3. **Opportunities in the private and government sectors.** Many Qatari nationals are attracted by either more lucrative private business opportunities or by the civil service and armed forces. In effect, the economic boom of the 1970s drained the oil industry of its potential future managers.
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Table 1

**Qatar: Employees in Government Sector
by Nationality and Educational Status, 1985, 1987**

	Qataris		Non-Qataris				Total
			Arabs	Foreign	Total		
1987							
Illiterate or read and write	6,392	(44.0)	1,733	3,924	5,657	(29.2)	12,049
Primary	969	(6.7)	114	321	435	(2.2)	1,404
Intermediate	981	(6.8)	176	491	667	(3.4)	1,648
Secondary	1,399	(9.6)	1,275	1,739	3,014	(15.5)	4,413
Diploma	1,092	(7.5)	2,066	1,359	3,425	(17.7)	4,517
B.A./B.Sc.	3,015	(20.7)	3,519	1,062	4,581	(23.6)	7,596
Higher Diploma	49	(0.3)	312	76	388	(2.0)	437
M.A/M.Sc.	54	(0.4)	162	60	222	(1.1)	276
Ph.D	35	(0.2)	307	39	346	(1.8)	381
Others	508	(3.5)	290	214	504	(2.6)	1,012
Total	14,531		9,989	9,409	19,398		33,929
1985							
Literate or read and write	6,603	(47.0)	1,693	3,835	5,528	(29.4)	12,131
Primary	849	(6.0)	90	329	419	(2.2)	1,268
Intermediate	849	(6.0)	183	569	752	(4.0)	1,601
Secondary	1,521	(10.8)	1,239	1,852	3,091	(16.5)	4,612
Diploma	953	(6.8)	1,541	1,207	2,748	(14.6)	3,701
B.A./B.Sc.	2,352	(16.7)	3,638	996	4,634	(24.7)	6,986
Higher Diploma	46	(0.3)	333	49	382	(2.0)	428
M.A/M.Sc.	49	(0.3)	219	97	316	(1.7)	365
Ph.D	17	(0.1)	271	51	322	(1.7)	339
Others	803	(5.7)	363	209	572	(3.0)	1,375
Total	14,050		9,572	9,210	18,782		32,832

Source: State of Qatar, Central Statistical Organization, *Annual Statistical Abstract*, July 1988, p.71

Note: Excludes the employees of Qatar General Petroleum Corporation.

Table 2

**Qatar: Employees in the Mixed Sector
by Nationality and Educational Status, 1985, 1987**

	Qataris		Non-Qataris			Total	
			Arabs	Foreign	Total		
1987							
Literate or read and write	139	(38.0)	22	179	201	(7.6)	340
Primary	45	(12.3)	29	80	109	(4.1)	154
Intermediate	92	(25.1)	42	198	240	(9.1)	332
Secondary	27	(7.4)	142	708	850	(32.3)	877
Diploma	15	(4.1)	224	359	583	(22.1)	598
B.A./B.Sc.	39	(10.7)	183	377	560	(21.3)	599
Higher Diploma	1	(0.3)	10	24	34	(1.3)	35
M.A./M.Sc.	6	(1.6)	13	21	34	(1.3)	40
Ph.D	—	—	2	1	3	(0.1)	3
Others	2	(0.5)	—	21	21	(0.8)	23
Total	366		667	1,968	2,635		3,001
1985							
Literate or read and write	163	(44.1)	57	348	405	(11.6)	568
Primary	38	(10.3)	31	121	152	(4.4)	190
Intermediate	94	(25.4)	48	244	292	(8.4)	386
Secondary	23	(6.2)	172	1,001	1,173	(33.6)	1,196
Diploma	19	(5.1)	216	508	724	(20.7)	743
B.A./B.Sc.	24	(6.5)	216	437	653	(18.7)	677
Higher Diploma	1	(0.3)	7	25	32	(0.9)	33
M.A./M.Sc.	5	(1.4)	14	22	36	(1.0)	41
Ph.D	—	—	2	1	3	(0.1)	3
Others	3	(0.8)	1	19	20	(0.6)	23
Total	370		764	2,726	3,490		3,860

Source: State of Qatar, Central Statistical Organization, *Annual Statistical Abstract*, July 1988, p. 81.

Table 3

Qatar: Profile of Employees in the Private Sector, 1983

	Qataris		Non-Qataris				Total
			Arabs	Foreign	Total		
Education							
Literate or read and write	1,117	(61.6)	5,128	33,149	38,277	(58.0)	39,394
Primary	99	(5.5)	641	5,694	6,335	(9.6)	6,435
Intermediate	123	(6.8)	493	3,819	4,312	(6.5)	4,435
Secondary	276	(15.2)	1,507	7,095	8,602	(13.0)	8,879
Diploma	59	(3.3)	927	2,220	2,803	(4.3)	3,206
B.A./B.Sc.	105	(5.8)	1,279	2,370	3,649	(5.5)	3,754
Higher Diploma	7	(0.4)	58	191	249	(0.4)	256
M.A/M.Sc.	2	(0.1)	77	114	191	(0.3)	193
Ph.D	—	—	15	6	21	—	21
Others	24	(1.3)	114	1,045	1,159	(1.8)	1,185
Total	1,812		10,239	55,703	65,942		67,758

	Qataris		Non-Qataris				Total
			Arabs	Foreign	Total		
Occupation							
Professional	12	(0.7)	927	2,067	2,994	(4.5)	3,006
Administrative	665	(36.7)	592	851	1,443	(2.2)	2,108
Clerical	41	(2.3)	1,389	4,576	5,965	(9.0)	6,006
Sales	969	(53.5)	873	5,211	6,084	(9.2)	7,053
Service	98	(5.4)	449	5,082	5,531	(8.4)	5,629
Agricultural	5	(0.3)	40	67	107	(0.2)	107
Production workers	28	(1.5)	5,968	37,836	43,936	(66.6)	43,835
Other	—	—	1	13	14	—	14
Total	1,812		10,239	55,703	65,942		67,758

Source: State of Qatar, Central Statistical Organization, *Annual Statistical Abstract*, July 1988, pp. 88, 89.

4. **Indifference towards training by international oil companies.** It is difficult to ascertain whether training and development of nationals were neglected by accident or by design. It is certain that the major oil companies, who discovered the oil and operated the fields, did not consider training of Qataris as one of their top priorities.

The relatively large share of foreign workers, even by Gulf standards has raised a number of issues related to the country's manpower strategy.

1. **Unproductive unemployment of nationals.** A major issue is whether such a level of immigration is actually causing unemployment amongst the national population. It is possible that the large numbers of cheaply and easily available expatriates are slowing down the transfer of nationals from the traditional to the modern sector. Furthermore, nationals are becoming less inclined toward production and related occupations, which implies a continued heavy dependence on foreigners to fill such jobs.
2. **Underdevelopment of human resources.** A more profound aspect of the importation of so much labour into Qatar has been the stunted development of their indigenous human resources. The widespread use of migrant labour combined with the high level of wealth, has led to a proliferation of luxury employment for nationals, which amounts to their withdrawal from the productive workforce. In fact, the educational system has become geared towards preparing nationals for this luxury employment rather than for productive employment. Thus migration has distorted the nature of development of human capital in Qatar. Labour migration has led to native dependency on foreign manpower not only in quantitative, but also qualitative terms.

The country's open employment policy, coupled with a civil service system that minimizes competition and ignores an objective system of evaluation, has in all likelihood produced this low level of job commitment and low productivity. Continued dependence on imported labour may intensify this trend. More government efforts towards the localization of the labour force have, in general, brought about a clear mismatch between the job requirements and the nationals available to fill them. Such a trend has resulted in low productivity of nationals who make up the labour force (United Nations, 1988, pp.16-19).

III. A FRAMEWORK FOR ANALYSIS

The factors outlined above are suggestive of a number of variables that affect employment patterns in Qatar and the Gulf in general. In terms of those variables that can be easily quantified, we have selected six main factors that are likely to influence the differential rates of job creation:

1. **The growth in income.** Up to a point, increased rates of economic expansion are conducive to accelerated demands for workers of all types. However, whenever this expansion outstrips the ability of the local population to fill new vacancies, the importation of foreign workers becomes a necessary element in sustaining growth. The incremental increase in real non-oil Gross Domestic Product (GDP) was used to depict this effect. This measure is superior to changes in total real Gross Domestic Product,
-

because: (a) the oil sector does not directly employ many workers; (b) Qatar and the other Gulf countries have maintained domestic expenditures during periods of falling oil revenues by drawing on their accumulated international reserves. Finally, at full employment, the ability of the Qatari economy to generate new jobs is obviously limited. To determine the effect of capacity limitations on job creation, an additional variable, the rate of inflation (*INF*) was introduced.

2. **Educational expenditures.** Literacy is a good indicator of the degree of development in a country. As noted above, the literacy rate in Qatar was, until quite recently, very low. For example, as late as 1980, the rate of literacy in Qatar was 59.2%. By comparison, Kuwait's literacy rate, the highest in the Gulf region, was 68.1%, followed by UAE at 66.3%, Bahrain at 49.9%, Oman at 38.3%, and Saudi Arabia at 33.5% (United Nations, 1982). The drive to increase literacy in the region has resulted in withdrawals from the labour force of workers who would ordinarily be actively employed. The change in educational expenditures (*ED*) was used to proxy this effect on employment.
3. **Population growth.** Everything else equal, the countries with higher proportional rates of population growth (*POP*) should be able to take advantage of expanding employment opportunities, thus experiencing expansion in job creation. However, given the increasing sophistication of many jobs in the region, the rate of hirings may be sensitive not only to the number of new entrants into the labour force, but also to the number of literate entrants. To examine this possibility, the increase in the literate population (*LRP*) was also included as a independent variable in the regression analysis.
4. **Labour force participation rate.** The labour force participation rates of the Gulf States are low compared with the industrialized countries. While low by international standards, Qatar's 53.3% was relatively high for the region. In fact, the rate in four Gulf countries does not exceed 40% of crude economic activity rates: Saudi Arabia 25.7%, Kuwait 32.9%, Oman 30.8% and Bahrain 34.5%. In the UAE, the rate was 54.7%. The high rates for Qatar and the UAE are indicative of the two country's ability to attract large numbers of Asian workers who opt not to bring their families (Arikat, 1982, p.6). These rates have increased in recent years largely due to the expansion in the government sector jobs, together with increased participation by females. As these rates continue to increase, there may be a fairly large surge in the domestic workforce.
5. **The military participation effect.** Expanded government expenditures in the Gulf have resulted in increased rates of labour force participation in the Gulf States. This effect has been particularly significant in the area of defense forces. The rapid expansion in allocations to the military has been well documented. Less well known is the corresponding increase in manpower requirements created by these expenditures (Cummings, et. al., 1980). The region's stepped-up rate of defense expenditures has several implications for the overall increase in employment: (1) the rate of job creation is higher than would have ordinarily been the case, since

expansion of the armed forces is not dependent on a corresponding increase in indigenous economic activity, and (2) the need for foreign workers will be greater due to the vacancies created in the labour market by younger men opting for the military. These effects are tested for by introducing the increase in armed forces (*AF*) and the military participation (*AFP*) rate (military personnel per 1000 population) into the regression equations.

6. **The oil effect.** This effect is intended to capture the significant surge in construction activity and related increases in employment associated with increased (post-1973) growth in the Gulf States. Everything else equal, this effect should result in more employment (and certainly foreign workers) per unit of income increase than is likely to be the case in countries not in a position to import massive amounts of equipment and workers. It is this construction activity that was responsible for the rapid increase in expatriate labour in the 1970s (and their almost equally rapid departure in the post-1982 era of declining oil prices). This variable was proxied by multiplying an oil dummy variable, with values of 1 for the major oil exporting countries, and 0 for the other Arab countries, times the change in income.

In the analysis that follows, economic data are for the years 1975, 1980 and 1985, and were taken from The Arab Monetary Fund (1987). This source provides the basic data set of the twenty countries: Jordan, The United Arab Emirates, Bahrain, Tunisia, Algeria, Saudi Arabia, Sudan, Syria, Somalia, Iraq, Oman, Qatar, Kuwait, Lebanon, Libya, Egypt, Morocco, Mauritania, Yemen Arab Republic and the Peoples Democratic Republic of Yemen.

Social data for each of these twenty countries was taken from Sivard (1988). Military data is from The United States Arms Control and Disarmament Agency (1988). Finally, employment data was taken from Serageldin (1983).

Based on the above discussion, the estimated equations are of the form:

Total employment (*TEMP*) and employment of nationals (*DEMP*) =
Non-Oil Gross Domestic Product (*YNO* +), Inflation (*INF* ?), Education (*ED* -), Literate Population, (*LPR* +), Population (*POP* +), Labour Force Participation Rate (*LPR* +), Armed Forces (*AF* +), and the Oil Effect (*DYNO* +).

(Employment of foreigners (*FEMP*) =
Income (*YNO* +), Inflation (*INF* ?), Education (*ED* +), Population (*POP* -), Labour Participation Rate (*LPR* -), Armed Forces (*AF* +), Oil Effect (*DYNO* +)

All figures are in terms of the average annual rate of growth over the specified time interval.

IV. RESULTS

Equations were estimated using ordinary least squares regression technique. Statistics are reported (Tables 4, 5, and 6) in terms of: r^2 = the coefficient of determination; F = The F statistic, and df = the degrees of freedom. The student

Table 4

Determinants of Employment in Qatar and the Arab World, 1975-85
(standardized regression coefficients)

Total Employment (TEMP)

$$(1) \text{ TEMP} = 0.35 \text{ YNO} + 0.68 \text{ POP} + 0.32 \text{ LPR}$$

(2.15) (4.11) (2.24)

$$r^2 = 0.773; \quad F = 13.58 \quad df = 16$$

student residual: Qatar = 0.33

UAE = 0.77; Saudi Arabia = -0.99; Bahrain = 0.40

Oman = -2.09; Kuwait = -0.15; Iraq = 0.55

$$(2) \text{ TEMP} = 0.45 \text{ YNO} + 0.98 \text{ POP} + 0.23 \text{ LPR} - 0.83 \text{ ED} + 0.52 \text{ DYNO} - 0.45 \text{ INF}$$

(2.74) (7.76) (2.76) (-2.88) (2.07) (-4.87)

$$r^2 = 0.948; \quad F = 27.33 \quad df = 13$$

student residual: Qatar = 0.26

UAE = -2.13; Saudi Arabia = 1.14; Bahrain = -0.22

Oman = -1.31; Kuwait = -0.83; Iraq = 0.68

Employment of Nationals (NEMP)

$$(3) \text{ NEMP} = 0.31 \text{ YNO} + 0.98 \text{ POP} + 0.23 \text{ LPR} - 0.61 \text{ ED} + 0.09 \text{ DYNO} - 0.49 \text{ INF}$$

(2.03) (7.64) (2.70) (-2.11) (0.37) (-5.23)

$$r^2 = 0.947; \quad F = 26.58 \quad df = 13$$

student residual: Qatar = 0.34

UAE = -2.34; Saudi Arabia = 1.27; Bahrain = 0.02;

Oman = -0.93; Kuwait = -0.38; Iraq = 1.11

Employment of Foreigners (FEMP)

$$(4) \text{ FEMP} = 0.47 \text{ YNO} - 0.11 \text{ POP} + 0.38 \text{ LPR} - 0.64 \text{ ED} + 0.83 \text{ DYNO} + 0.02 \text{ INF}$$

(2.03) (-0.98) (3.56) (-2.57) (3.61) (0.47)

$$r^2 = 0.892; \quad F = 14.27 \quad df = 13$$

student residual: Qatar = -0.42

UAE = 0.73; Saudi Arabia = -0.26; Bahrain = -0.77;

Oman = -1.83; Kuwait = -1.49; Iraq = -0.25

Notes: See text for definition of symbols. All variables are in terms of average annual rates of growth over the 1975-85 period.

residual is the estimated using the equation residual divided by an estimate of its standard deviation. Usually the standardized and student residuals are close in value, but not always. The student residual reflects more precisely differences in the true error variances from point to point (SPSS, 1988, p. B-207).

This analysis produced several interesting findings. The most significant of these for the period as a whole (1975-85) was that (Table 4):

1. The expansion in total employment (nationals plus foreigners) has been largely a function of expansion of both economic activity and increases in population. Interestingly enough, the increase in total population (*POP*) was considerably more important in this regard than the expansion of the literate population (which was not statistically significant).
2. When taking into account all of the statistically significant variables affecting the expansion of total employment (equation 2, Table 4), it appears that the Qatari economy has been above average in terms of

expanding employment opportunities—as indicated by the positive sign on the student residual, Qatar's actual rate of job creation was somewhat greater than that predicted by the model.

3. Increased educational expenditures seem to have resulted in a slowdown in total employment and in the employment of nationals. However, increased withdrawals of nationals from the workforce does not appear in and of itself to have significantly increased the employment opportunities for foreign workers. Instead, for the 1975-80 period as a whole, increased demands for foreign workers appear to be related mainly to the overall expansion of the economy and the additional financial stimulus provided by oil revenues.
4. Based on the positive sign of its student residual, it appears in the context of the economic environment of the region that Qatar has been above average in terms of expanding domestic employment. On the other hand, the country was below average in increasing the number of jobs held by foreign workers.
5. Statistically, the inflation term (*INF*) was also quite significant in both the total and national (but not foreign) labour force employment equations. If the inflation term had been positive in the foreign labour force equations, we could conclude fairly safely that we were observing the inability of our sample countries to attract additional national workers into the labour force during periods of or close to full employment. Under these circumstances, the spill-over into foreign labour markets would be a natural means of compensating for labour shortages during boom years. Instead, the strong negative sign on the inflation term suggests (but is not conclusive evidence) that inflation may divert investment funds into speculative rather than capacity creating activities.
6. The oil effect (*DYNO*) appears to have been fairly important in explaining overall employment, but not increases in domestic employment. As might have been imagined, the oil effect was quite significant (equation 4, Table 4) in explaining movements in the foreign workforce.
7. Movements in the numbers of soldiers in the armed forces (not shown here) were not statistically significant when introduced into the regression equations, and hence do not appear, at least for the period as a whole, to have placed a strain on labour markets in Qatar or the other Arab world in general.

In sum, analysis for the period as a whole produced a fairly consistent set of results. Economic factors alone appear to have accounted for well over 90% of the fluctuations in total, national and foreign workforces.

In order to gain some idea of the stability over time of these relationships, similar exercises were undertaken for the two five-year sub-periods, 1975-80 and 1980-85. With regard to the earlier period (Table 5) several important differences relative to the period as a whole were found:

1. The major difference involves the importance of literate, as opposed to total, population in affecting the expansion of total and national employment. Put differently, increases in employment in this earlier period were largely a function of increases in the literate population, rather than the
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Table 5

Determinants of Employment in Qatar and the Arab World, 1975-80
(standardized regression coefficients)

Total Employment (TEMP)

$$(1) TEMP = 0.45 YNO + 0.34 LPR + 0.69 LRP$$

(4.75) (3.59) (7.26)

$$r^2 = 0.868; \quad F = 33.94 \quad df = 16$$

student residual: Qatar = 0.10

UAE = 1.09; Saudi Arabia = 0.26; Bahrain = 0.56;

Oman = -0.50; Kuwait = 0.31; Iraq = 1.41

oil shocks (DYNO), armed forces (AF)

$$(2) TEMP = 0.01 YNO + 0.34 LPR + 0.80 LRP + 0.47 DYNO + 0.30 AF$$

(0.04) (5.10) (9.40) (2.78) (3.46)

$$r^2 = 0.955; \quad F = 42.84; \quad df = 14$$

student residual: Qatar = 0.10

UAE = 1.06; Saudi Arabia = -0.84; Bahrain = 0.78;

Oman = -0.87; Kuwait = 0.52; Iraq = -1.20

$$(3) TEMP = 0.34 LPR + 0.80 LRP + 0.46 DYNO + 0.29 AF$$

(11.80) (5.36) (7.06) (4.41)

$$r^2 = 0.955; \quad F = 58.90; \quad df = 15$$

student residual: Qatar = 0.11

UAE = 1.10; Saudi Arabia = -0.84; Bahrain = 0.81;

Oman = -0.90; Kuwait = 0.55; Iraq = -1.26

Employment of Nationals (NEMP)

$$(3) NEMP = 0.72 YNO + 0.76 LPR - 0.51 ED + 0.18 LRP$$

(1.97) (6.31) (-1.42) (1.78)

$$r^2 = 0.845; \quad F = 21.50; \quad df = 15$$

student residual: Qatar = 1.07

UAE = -0.58; Saudi Arabia = -0.20; Bahrain = 0.58;

Oman = 0.02; Kuwait = -1.34; Iraq = 1.86

Employment of Foreigners (FEMP)

$$(4) FEMP = 0.48 YNO + 0.46 LPR - 0.55 ED + 0.94 DYNO$$

(2.05) (6.06) (-1.96) (6.45)

$$r^2 = 0.914; \quad F = 41.04 \quad df = 15$$

student residual: Qatar = 0.54

UAE = 1.14; Saudi Arabia = -2.03; Bahrain = -0.18;

Oman = -1.57; Kuwait = 2.32; Iraq = -0.11

Note: All variables are in terms of average annual rates of growth over the 1975-80 period.

overall increase in population, a characteristic found for the period as a whole.

2. In addition, during the earlier period, expanded rates of employment were more closely associated with increases in the labour participation rate than had been the case for the entire period.
3. Expansion of the armed forces (AF in equation 3) was a fairly important source of employment during the 1975-80 period, but again not for the entire ten years under examination.

Table 6

Determinants of Employment in Qatar and the Arab World, 1980-85
(standardized regression coefficients)

Total Employment (TEMP)

$$(1) TEMP = 1.10 POP + 0.40 LPR - 0.56 ED + 0.40 DYNO - 0.47 INF$$

(9.49) (4.36) (-2.13) (1.62) (-4.76)

$r^2 = 0.929$; $F = 26.25$; $df = 14$

student residual: Qatar = -0.55

UAE = -0.27; Saudi Arabia = -0.17; Bahrain = 0.00;

Oman = -1.33; Kuwait = -1.07; Iraq = 0.49

Employment of Nationals (NEMP)

$$(2) NEMP = 0.41 YNO + 0.74 POP - 0.37 LRP - 0.41 ED$$

(1.87) (3.79) (-2.14) (-2.46)

$r^2 = 0.760$; $F = 8.70$ $df = 15$

student residual: Qatar = -0.54

UAE = -0.36; Saudi Arabia = 0.33; Bahrain = -0.15;

Oman = 0.85; Kuwait = -0.73; Iraq = 0.74

$$(3) NEMP = 0.06 YNO + 1.10 POP - 0.21 LRP - 0.47 ED - 0.48 INF$$

(0.27) (5.63) (-1.64) (-3.61) (-2.90)

$r^2 = 0.869$; $F = 13.33$ $df = 14$

student residual: Qatar = -0.86

UAE = -0.78; Saudi Arabia = 0.46; Bahrain = -0.23;

Oman = 1.96; Kuwait = -1.24; Iraq = 1.12

Employment of Foreigners (FEMP)

$$(4) FEMP = 0.53 YNO - 0.15 POP + 0.06 LPR - 0.56 ED + 1.14 DYNO + 0.06 INF$$

(2.72) (-0.98) (0.56) (-1.54) (3.61) (0.54)

$r^2 = 0.916$; $F = 16.35$ $df = 13$

student residual: Qatar = -0.49

UAE = 0.71; Saudi Arabia = -0.23; Bahrain = -0.87;

Oman = -1.67; Kuwait = -1.43; Iraq = -0.30

Note: All variables are in terms of average annual rates of growth over the 1980-85.

4. In contrast to the entire period, the foreign labour force increased in line with increases in the labour participation rate (but not increases in the numbers of literate population). This pattern undoubtedly reflects the expanded employment opportunities (and hence increased labour participation rate) of the literate national work force associated with increases in government hirings financed by stepped-up oil revenues. During this period, foreign workers (themselves having a very high participation rate) undoubtedly assumed many of the lower scale manual jobs, looked down upon particularly by the literate population.

5. Again, Qatar was fairly successful in creating employment opportunities, especially for Qataris. The very high student residual (equation 3 Table 5) for the increase in native employment was one of the highest in the Arab world.

For the latter (1980-85) period, several additional differences were found (Table 6).

1. In general, most of the estimated equations accounted for a much lower percentage of movements in employment than had been the case in the two previous sets of analysis.
2. More importantly, increases in income had lost most of their total and national employment generating effects. However, increases in the foreign workforce were still largely a function on increased non-oil output and the oil price effects.
3. During this recent period, increases in employment were largely a function of expanded rates of population growth, as opposed to increases in the literate population.
4. Again in contrast to the earlier period, Qatar's ability to generate employment opportunities appears to have declined significantly. Given the economic environment existing in the region at this time, the country was below average in terms of the number of jobs (total, national and foreign), created.

CONCLUSIONS

Qatar's employment patterns in recent years are suggestive, but do not provide conclusive proof, of a general decline in worker productivity. This decline is evidenced primarily by the lack of a strong link between increases in employment and corresponding increases in output. In part, this phenomenon reflects the excessive retention and even expansion of the number of public sector workers, during a period of contraction of employment opportunities in the mixed (and presumably private) sector. The severing of the link between employment and expansion of the literate population also may be indicative of a general decline in overall worker productivity.

While not conclusive proof, the results obtained above, particularly for the 1980-85 period, do suggest that labour market mismatches may be increasing in Qatar and the Arab world in general. One symptom of this is the observed relatively high levels of disguised unemployment among the highly educated, coupled with a shortage of artisans (Muna, 1987). The damage arising from these skill mismatches lies in the way the various economic sectors are likely to expand while faced by labour constraints.

Two elements of change in government behavior may provide a transmission mechanism for skill mismatches:

1. There has been very rapid decision making involving education. This arose from the pressure on government to spend quickly and has resulted in a very rapid expansion in the tertiary education sector (including sending students abroad) with only limited consideration for the primary and secondary sectors, together with a neglect of technical education. In effect, education policy has developed as a by-product of spending decisions rather than as the result of any carefully laid out education policy.
2. Once the mismatches appear, government has been willing (via revenue access) to absorb them in employment policies—overdevelopment of

bureaucracy to provide employment for nationals returning from education abroad who would otherwise be employed below their desired status. The willingness to absorb the skill mismatches thus tends to disguise the appearance of signals warning against the development of even greater mismatches.

What is suggested here is that reforms of both the educational system and hiring practices of government agencies in Qatar will be necessary if increases in productivity and ultimately expanded rates of non-oil income are to take place in the foreseeable future.

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